REMARKS/ARGUMENTS

Reconsideration of the captioned application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicants basically:

1. Amend the Abstract.
2. Amend in non-narrowing fashion each of claims 1, 4, 12-14, 23, 32, and 34-36 to moor the claim objections as well as the rejections under 35 USC §112, second paragraph.
3. Submit a replacement sheet for Fig. 14 as a separate electronic submission. The replacement sheet for Fig. 14 is consistent with the Proposed Drawing Changes which were submitted on April 29, 2004.
4. Add new dependent claims 40 and 41 supported, e.g., by the last full paragraph on page 9 of the specification.
5. Respectfully traverse all prior art rejections.
6. Request a two-month extension of time.

B. PATENTABILITY OF THE CLAIMS

Claims 1, 11, 23 and 32 stand rejected under 35 USC 102(b) as being anticipated by U.S. Patent 4,982,426 to Jakab. Claims 1, 11, 15-17, 23 and 31-32 stand rejected under 35 USC 102(b) as being anticipated by EP 0923221 to Williamson et al. Claims 4-10, 12-14, 18, 25-30 and 33-39 stand rejected under 35 USC 103(a) as being unpatentable over EP 0923221 to Williamson et al as applied to claim 1 above. All prior art rejections are respectfully traversed for at least the following reasons.

U.S. Patent 4,982,426 to Jakab

In enumerated paragraph 11 the office action opines that U.S. Patent 4,982,426 to JakabU.S. Patent 4,982,426 to Jakab "discloses a filter (32) for filtering signals in a telecommunication system and for complex impedance matching (38), as shown in figure 4". According to Jakab's description, however, reference number 32 is a transformer of a line interface circuit 70 (e.g., a 2wire-to-4wire hybrid circuit), and this is ***NOT*** a filter (see column 8, line 20-24 of U.S. Patent 4,982,426 to Jakab).

Jakab's circuit (*see*, e.g., column 1, lines 33-50) provides a telecommunications line interface circuit for coupling a telecommunications line to a transmit line and a receive line. Jakab's circuit comprises: a first transformer having a first winding for coupling to the telecommunications line and having a second winding; a first amplifier having an input for coupling to the receive line and having an output coupled to the second winding of the first transformer and providing a low impedance termination thereof; a second transformer having a first winding for coupling to the telecommunications line and having a second winding; a second amplifier having an input coupled to the second winding of the second transformer and an output for coupling to the transmit line; and means interconnecting the first windings of the first and second transformers for conducting a direct current on the telecommunications line through said first windings. (*See*, further, e.g., column 5, lines 41-46).

Jakab's balance impedance, i.e. the complex impedance 38 to be matched, is connected between the output of the amplifier 42 and the inverting input of the amplifier 40 to provide for transhybrid cancellation of signals at the signal summing node constituted by the inverting input of the amplifier 40. U.S. Patent 4,982,426 to Jakab is thus utterly irrelevant, since, e.g., (1) there is no filter and (2) the matching of impedance concerns the matching of a transformer winding impedance to a balance impedance, *NOT*

a filter impedance matched to a transmission line impedance (see, e.g., dependent claims 11, 32, and 40 - 41). Moreover, Jakab does not treat the same technical problem and has dissimilar structure and methodology.

Williamson et al.

It is respectfully requested that Williamson be withdrawn as a reference. For the second time[1], it is respectfully requested that the Office's capitulation concerning patentability over Williamson be given full faith and credit. In particular, Williamson (either in the form of EP 0 923 221 B1 or US Patent 6,249,477) has been applied earlier (see office action of 08/14/2006) and overcome by the Request For Reconsideration filed of November 14, 2006 (after which Williamson et al. was withdrawn, i.e., was not applied in the Official Action dated January 30, 2007).

Williamson discloses a method of switching filters between two different states. Williamson et al. has different cut off frequencies, and does NOT disclose any method for achieving complex impedance. Instead, Williamson avoids the complex impedance issue by switching.

---

[1] The first request for Full Faith and Credit appeared in the Request For Reconsideration filed November 14, 2006, pp. 9 *et. seq*. Summarizing the facts presented in the first request: U.S. Patent 6,477,249 to Williamson et al. was applied by the US Patent Office in a rejection dated June 22, 2004. Applicant responded to the June 22, 2004 rejection in an request for reconsideration filed October 21, 2004. In an office action mailed March 17, 2005, the Examiner stated that "Applicants arguments, see pages 9 – 12, filed October 21, 2004, with respect to rejection(s) of claim(s) 1, 3, 23, and 24 under 35 USC §102(e) have been fully considered and are persuasive. Therefore the rejection has been withdrawn". (A new ground of rejection was formulated in the March 17, 2005 office action).

Applicant now again repeats comments advanced in Applicant's reconsideration filed October 21, 2004 (the initial version of these comments appears in the November 14, 2006 Request for Reconsideration). Applicant's repeated comments concerning U.S. Patent 6,477,249 to Williamson et al. are applicable to EP 0923221 as well (both now collectively referred to as "Williamson", but specific citations are made to U.S. Patent 6,477,249 to Williamson et al.).

Applicant's rejected independent claims concern a filter for filtering signals in a telecommunications system, which filter is passive and has a complex characteristic impedance which at least approximately matches a predetermined complex impedance. The filter comprises a resistance which is chosen such that it assists in giving the filter its said complex characteristic impedance.

Applicant reiterates that the resistance of Williamson's filters are not chosen such to provide the filter with said complex characteristic impedance. The Williamson filters clearly comprise inductors and capacitor, which are *reactive components* and give the filter a *resistive characteristic impedance*, not a *complex characteristic impedance*, which include a resistance or resistive element. The Williamson filter comprises a detector and a switching device. As stated in Williamson column 7, lines 47-50, "the detector and switching functions may be combined by using a device that varies in resistance, thereby performing a switching function, in response to some property of the telephony traffic."

In column 6, lines 1 - 9, Williamson points out that

> Ideally the filter is perfectly matched with the transmission line and terminal equipment to which it is coupled, and therefore does not reflect power. A poor filter return loss causes echoes on the line, which can be distracting to a subscriber, and also causes a change in the sidetone level heard by a subscriber, i.e. the amount by which a person hears their own voice when involved in a telephone conversation.

Further, Williamson states that

> "because the transmission line is not lossless at voice band frequencies, the characteristic impedance of transmission lines and terminal equipment is complex so that a good return loss the termination impedance needs to match this and thus also needs to be complex (see column 6, lines 31-35).

With Williamson's statements as quoted in the preceding paragraph in mind, note specifically the embodiments in Fig. 8-13 in Williamson:

- Fig. 10 shows current against voltage, and further shows the performance of the non-linear element (NLE) in the filter illustrated in Fig. 8. Above a certain threshold voltage the current increases sharply due to the fact that the resistance of the NLE decreases to zero and the NLE (transistor or thyristor) will operate in its fully conducting mode, and under the threshold voltage the current decreases to zero due to the fact that the resistance of the NLE will increase to infinity and the NLE will operate in its non-conducting mode, i.e. switch from conducting (on) to interruption (off). The effect of the NLE is that for low amplitude signals, such as speech, the NLE has a high resistance and therefore capacitor C2 is not active. With high amplitude signals, such as POTS loop-disconnecting signalling, the NLE has a low resistance and therefore the capacitor C2 is active and forms a part of the low-pass filter.

- Williamson Fig. 9A shows the equivalent circuit for the low-pass filter with low amplitude signals, with only inductor L and capacitor C1 in use.

- Fig. 9B shows the equivalent circuit for the low-pass filter with high amplitude signals, with inductor L and capacitors C1 and C2 in operation in parallel thus reducing the cut-off frequency of the filter.

- The embodiment showed in Williamson Fig. 11 illustrates a filter switching between a low-order filter and an high-order filter by means of the NLE, which will switch between low-resistance (i.e. the resistance is neglectable) and high-resistance (i.e. cut-off).

- In the Williamson embodiments of Figs. 12 and 13 respectively, a switch is used instead of a NLE. It is obvious that during speech (low amplitude signals), the Williamson filter does not involve the capacitor C2 (C1 in Fig. 13) because no current will flow through the capacitor C2 (C1 in Fig 13) due to the switching element, a switch or a NLE, is operated in its interruption state.

- In Williamson Fig. 9A, the equivalent circuit for the speech mode is illustrated and NO RESISTANCE is present.

Therefore, the Williamson filter does not have a complex characteristic impedance during speech mode, which is a very important difference in comparison to independent claim 1. Further, as stated above, if the termination impedance is not complex the impedance match is not good, resulting in that the return loss is poor causing echoes on the line which can be distracting to a subscriber. In Williamson Fig. 9B, the equivalent circuit for the signalling mode is illustrated and NO RESISTANCE is present in the circuit. If the resistance of the NLE had been important for accomplishing complex impedance, the equivalent circuits of Williamson Figs. 9A and 9B would have been provided with resistors. However, in the alternate circuits shown in Williamson Figs. 12 and 13, the NLE is replaced by a switch. Even though Williamson teaches the use of elements having resistance, it is not suggested by Williamson that the resistance is chosen for matching purpose of a complex characteristic impedance.

Thus, Applicant vigorously maintains that the rejected claims patentably differ from what is taught by Williamson et al., and that Williamson does not form any basis for denying patentability of Applicant's claims.

Conclusion

The Jakab line interface circuit comprises amplifiers and the Williamson filter arrangement needs a detector and a switch, both implemented as transistor circuits. As mentioned in Applicants' description (*see*, e.g., page 4, lines 10-21), an active filter (i.e., a filter using active components) has to be powered, which could be problematic at a location where no power supply is found. An active filter will not function in the event of power failure. A person skilled in the art would therefore not consider Jakab or Williamson for avoiding problems with active components.

Applicants, by contrast, provide a filter that affords good impedance matching to a transmission line or to a similar complex impedance and which is passive at the same time. Thus, the claimed invention according to any of the independent claims 1 and 23 show considerable technical differences in relation to Williamson et al and Jakab.

C. MISCELLANEOUS

All claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: /H. Warren Burnam, Jr./

H. Warren Burnam, Jr.
Reg. No. 29,366

HWB:lsh
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

.